WE CLAIM:

1. A method for the thermal treatment of a planar substrate, comprising:

providing a reactor having one or more furnace bodies, the one or more furnace bodies each having a substantially flat boundary surface;

heating the one or more furnace bodies to a predetermined furnace body temperature;

placing the substrate adjacent to and essentially parallel to the one or more furnace bodies such that a planar surface of the substrate faces the boundary surface of each of the one or more furnace bodies;

keeping the substrate adjacent to the boundary surface of each of the one or more furnace bodies during a heat-up time to allow the substrate to heat up to a substrate temperature, wherein the substrate temperature is less than the furnace body temperature by about 20°C or more; and

subsequently removing the substrate from the reactor while the substrate temperature is still less than the furnace body temperature of each of the one or more furnace bodies by about 20°C or more.

2. The method of Claim 1, further comprising holding the substrate in a position facing each of the one or more furnace bodies and lowering an amount of heat transfer between the one or more furnace bodies furnace body and the substrate during a holding time after the heat-up time, wherein a transfer of heat from each of the one or more furnace bodies to the substrate is at a lower rate during the holding time than during the heat-up time and wherein the temperature of each of the one or more furnace bodies is unchanged.

3. The method of Claim 2, wherein the heat up time is about 3 seconds or less.

4. The method of Claim 3, wherein the holding time about 5 seconds or more.

5. The method of Claim 4, wherein the holding time about 8 seconds or more.

6. The method of Claim 2, further comprising:

placing a second substrate for a second thermal treatment adjacent to and essentially parallel to the one or more furnace bodies after removing the substrate; and

keeping the second substrate adjacent to the boundary surface of each of the one or more furnace bodies during a second heat-up time to allow the second

substrate to heat up to a second substrate temperature, wherein the furnace body temperature is substantially unchanged.

7. The method of Claim 6, wherein the second substrate is the substrate that was removed from the reactor while the substrate temperature was still less than the temperature of each of the one or more furnace bodies by about 20°C or more.

8. The method of Claim 2, further comprising:

admitting a gas between each of the one or more furnace bodies and the substrate during the heat-up time and the holding time, and

wherein lowering the amount of heat transfer comprises increasing a distance between the substrate and each of the one or more furnace bodies, wherein a distance between the substrate and each of the one or more furnace bodies during the heat-up time is smaller than a distance between the substrate and each of the one or more furnace bodies during the holding time.

9. The method of Claim 8, wherein a distance between the substrate and each of the one or more furnace bodies during the heat-up time is about 2 mm or less.

10. The method of Claim 9, wherein the distance between the substrate and each of the one or more furnace bodies during the heat-up time is about 1 mm or less.

11. The method of Claim 10, wherein the distance between the substrate and each of the one or more furnace bodies during the heat-up time is about 0.15 mm or less.

12. The method of Claim 8, wherein a distance between the substrate and each of the one or more furnace bodies during the holding time is about 1 mm or more.

13. The method of Claim 12, wherein the distance between the substrate and each of the one or more furnace bodies during the holding time is about 2 mm or more.

14. The method of Claim 13, wherein the distance between the substrate and each of the one or more furnace bodies during the holding time is about 4 mm or more.

15. The method of Claim 14, wherein the distance between the substrate and each of the one or more furnace bodies during the holding time is about 9 mm or more.

16. The method of Claim 2, further comprising:

feeding a gas into a space between the one or more furnace bodies and the substrate, and

wherein lowering the amount of heat transfer comprises reducing the heat conductivity of the gas, wherein during the heat-up time a gas with a relatively high thermal conductivity is fed into the space and during the hold time a gas with a relatively low conductivity is fed into the space.

17. The method of Claim 1, wherein the one or more furnace bodies comprises a first and a second furnace body, wherein the first furnace body is opposite the second furnace body and the substrate is accommodated between the first and the second furnace bodies.

18. The method of Claim 17, wherein the predetermined furnace body temperature of the first furnace body is the same as the predetermined furnace body temperature of the second furnace body, wherein the second furnace body is maintained at the predetermined furnace body temperature throughout placing the substrate adjacent to and essentially parallel to the one ore more furnace bodies, keeping the substrate adjacent to the boundary surface and subsequently removing the substrate.

19. The method of Claim 17, further comprising:

emitting a gas toward the substrate from each of the first furnace body and the second furnace body, wherein the substrate is supported by emission of the gas without being contacted by any mechanical support during the heat up time.

20. The method of Claim 1, wherein heating the one or more furnaces bodies is performed before placing the substrate adjacent to and essentially parallel to the one or more furnace bodies.

21. A method for thermally treating a substrate, comprising:

providing a first heated surface at a first temperature and a second heated surface at a second temperature, the first heated surface positioned facing the second heated surface;

providing a substrate between the first and the second heated surfaces;

heating the substrate to a desired substrate temperature less than the first and the second temperatures;

reducing a transference of heat between the substrate and the first and the second surfaces after heating the substrate to the desired substrate temperature, wherein a set-point temperature for the first surface and a set-point temperature for the second surface is not reduced; and

performing a semiconductor fabrication process while maintaining the substrate between the first and the second heated surfaces after reducing the transference of heat.

22. The method of Claim 21, wherein heating the substrate comprises flowing a high thermal conductivity gas between the substrate and the first and the second heated surfaces.

23. The method of Claim 22, wherein reducing a transference of heat comprises flowing a low thermal conductivity gas between the substrate and the first and the second heated surfaces.

24. The method of Claim 23, wherein the high thermal conductivity gas comprises a gas chosen from the group consisting of hydrogen gas and helium gas.

25. The method of Claim 24, wherein the low thermal conductivity gas comprises a gas chosen from the group consisting of nitrogen gas and argon gas.

26. The method of Claim 21, wherein reducing a transference of heat comprises distancing the substrate from the first and the second surfaces.

27. The method of Claim 18, wherein a distance between the substrate and the first surface is equal to a distance between the substrate and the second surface after distancing the substrate from the first and the second surfaces.

28. The method of Claim 21, further comprising emitting gas from both the first and the second surfaces towards the substrate, wherein the substrate is supported between the first and the second heated surfaces floating upon the emitted gas during heating the substrate, reducing a transference of heat and performing a semiconductor fabrication process.

29. The method of Claim 21, wherein the desired substrate temperature is less than a higher temperature of the first and the second temperatures by about 20°C or more.

30. The method of Claim 29, wherein the desired substrate temperature is less than a higher temperature of the first and the second temperatures by about 50°C or more.

31. The method of Claim 30, wherein the desired substrate temperature is less than a higher temperature of the first and the second temperatures by about 100°C or more.

32. The method of Claim 21, wherein performing a semiconductor fabrication process comprises performing an anneal.

33. The method of Claim 21, wherein the substrate is maintained between the first and the second heated surfaces for 5 seconds or more after reducing the transference of heat.

34. The method of Claim 33, wherein the substrate is maintained between the first and the second heated surfaces for 8 seconds or more after reducing the transference of heat.

35. The method of Claim 21, wherein a mass of each of the first and second surfaces is more than about 10 times a substrate mass.

36. The method of Claim 21, wherein the mass is more than about 40 times the substrate mass.

37. A method for semiconductor processing, comprising:

conductively heating a first thermal treatment substrate in a reactor to a first thermal treatment temperature by positioning the first thermal treatment substrate in close proximity to a heated reactor surface;

substantially maintaining the first thermal treatment substrate at the first thermal treatment temperature for a first holding period in the reactor, wherein the first thermal treatment temperature is less than a temperature of the heated surface;

conductively heating a second thermal treatment substrate in the reactor to a second temperature higher than the first thermal treatment temperature by positioning the second thermal treatment substrate in close proximity to the heated reactor surface; and

substantially maintaining the second thermal treatment substrate at about the second temperature for a second holding period in the reactor,

wherein the reactor is configured to conductively heat only one substrate at a time.

38. The method of Claim 37, wherein the first thermal treatment substrate and the second thermal treatment substrate is the same substrate.

39. The method of Claim 38, further comprising:

removing the same substrate from the reactor and re-loading the same substrate into the reactor before conductively heating the second thermal treatment substrate.

40. The method of Claim 39, further comprising:

performing other processing after removing the substrate and before re-loading the substrate.

41. The method of Claim 40, wherein performing other processing comprises performing a patterning process.

42. The method of Claim 37, wherein conductively heating the first thermal treatment substrate occurs for less than about 3 seconds.

43. The method of Claim 37, wherein the holding period is about 5 seconds or more.

44. The method of Claim 43, wherein the holding period is about 8 seconds or more.

45. The method of Claim 37, wherein positioning the first thermal treatment substrate in close proximity to the heated reactor surface comprises positioning the first thermal treatment substrate between the heated reactor surface and a second heated reactor surface and wherein positioning the second thermal treatment substrate in close proximity to the heated reactor surface comprises positioning the second thermal treatment substrate between the heated reactor surface and a second heated reactor surface.

46. The method of Claim 37, wherein conductively heating the first thermal treatment substrate, substantially maintaining the first thermal treatment substrate, conductively heating the second thermal treatment substrate and substantially maintaining the second thermal treatment substrate comprises supporting the substrate in the reactor without contact with any mechanical support.

47. The method of Claim 46, wherein supporting the substrate comprises flowing a gas upwards to bottom surfaces of the first and second thermal treatment substrates to create a gas cushion.

48. The method of Claim 37, wherein substantially maintaining the first thermal treatment substrate at the first thermal treatment temperature comprises allowing the first thermal treatment temperature to rise by about 75°C or less.

49. The method of Claim 48, wherein substantially maintaining the first thermal treatment substrate at the first thermal treatment temperature comprises allowing the first thermal treatment temperature to rise about 50°C or less.

50. The method of Claim 37, wherein the second temperature is about a temperature of the heated surface.

51. The method of Claim 50, wherein substantially maintaining the second thermal treatment substrate at about the second temperature comprises allowing a second thermal treatment substrate to deviate from the temperature of the heated surface by about 2°C or less.

52. A heat treatment apparatus for processing a plurality of substrates, comprising:

two furnace bodies, the furnace bodies opposite each other and separated by a separation distance, each furnace body having a boundary surface oriented to face a substrate upon positioning of the substrate in the heat treatment apparatus for heat treatment, wherein the furnace bodies are movable relative to each other and each of the furnace bodies has a furnace body temperature; and

one or more heaters configured to heat each furnace body to its furnace body temperature,

wherein the apparatus is configured to be able to treat a substrate at either a first treatment temperature or a second treatment temperature, wherein the heater has a substantially constant set-point during treatment whether the substrate is at the first treatment temperature or the second treatment temperature.

53. The apparatus of Claim 52, wherein each of the furnace bodies is independently movable.

54. The apparatus of Claim 52, wherein the one or more heaters are configured to heat the furnace bodies to the same temperature.

55. The apparatus of Claim 52, wherein the first and the second treatment temperatures are less than the furnace body temperature of both furnace bodies by about 20°C or more.

56. The apparatus of Claim 52 configured to increase the separation distance depending upon a desired treatment temperature.